

Claims

1. An adhesive article comprising (a) a moisture resistant substrate having a first and second surface, and (b) a removable adhesive covering at least a first portion of the first surface of the substrate; wherein the removable adhesive has a Moist Loop Test result of at least about 0.25 N/25mm at a test plate temperature of 5°C.
2. The article of claim 1 wherein the moisture resistant substrate comprises a polymer coated paper facestock.
3. The article of claim 1 wherein the moisture resistant substrate comprises a monolayer or multilayer polymeric film.
4. The article of claim 1 wherein the substrate comprises a multilayer film.
5. The article of claim 1 wherein the substrate comprises a film selected from polystyrenes, polyolefins, polyamides, polyesters, polycarbonates, polyurethanes, polyacrylates, polyvinyl alcohol, poly(ethylene vinyl alcohol), poly(alkylene vinyl acetates), poly(alkylene acrylates), ionomers, and mixtures thereof.
6. The article of claim 1 wherein the substrate comprises a polyolefin film.
7. The article of claim 1 wherein the substrate comprises an ethylene or propylene polymer or copolymer.
8. The article of claim 1 wherein the removable adhesive comprises an acrylic based or rubber based pressure sensitive adhesive.
9. The article of claim 1 wherein the removable adhesive has a Moist Loop Test result of at least about 0.28 N/25mm at a test plate temperature of 5°C.
10. The article of claim 1 where the removable adhesive comprises a hot melt pressure sensitive adhesive.
11. The article of claim 1 wherein the removable adhesive comprises a rubber based adhesive.
12. The article of claim 1 wherein the removable adhesive comprises a styrene isoprene or styrene butadiene copolymer.

13. The article of claim 1 wherein the removable adhesive comprises a styrene-isoprene or styrene-butadiene copolymer having a mixture of triblock and diblock copolymers.

14. The article of claim 1 wherein the removable adhesive comprises a pressure-sensitive adhesive comprising:

(a) a first elastomer selected from the group consisting of a styrene-butadiene block copolymer, a styrene-butadiene-styrene block copolymer and mixtures thereof, the first elastomer exhibiting a first glass transition temperature and a first value of tangent delta measured as a function of temperature;

(b) a second elastomer selected from the group consisting of styrene-isoprene-styrene block copolymers, styrene-isoprene block copolymers, multiarmed styrene-isoprene block copolymers and mixtures thereof, the second elastomer exhibiting a second glass transition temperature greater than the first glass transition temperature and a second value of tangent delta measured as a function of temperature, the second elastomer being immiscible in the first elastomer, wherein the weight ratio of the first to the second elastomers is 0.5:1 to 5:1 and in which a dynamic mechanical spectrum plot of tangent delta as a function of temperature exhibits a polybutadiene-attributable first glass transition temperature peak determinable separate from and lower than a polyisoprene-attributable second glass transition temperature peak;

(c) a first tackifier comprising a normally solid tackifying component having a softening point of about 95° C. and obtained by polymerization of a stream solely composed of aliphatic petroleum derivatives in the form of dienes and monoolefins containing 5 or 6 carbon atoms, said tackifying component being preferentially miscible with the polyisoprene blocks of the second elastomer and present in an amount sufficient to cause an increase in second glass transition temperature and an increase in the temperature difference between the polybutadiene-attributable glass transition temperature peak and the polyisoprene-attributable glass transition temperature peak and an

increase in the tangent delta value attributed to the polyisoprene-attributable peak; and

(d) a second tackifier selected from the group consisting of rosins, rosin esters, and polyterpenes, wherein the total amount of the first and second tackifiers ranges from about 50 percent to about 70 percent by weight of the elastomers and tackifiers.

15. The article of claim 1 wherein the removable adhesive comprises a pressure-sensitive adhesive comprising:

(a) a first elastomer selected from the group consisting of a styrene-butadiene block copolymer, a styrene-butadiene-styrene block copolymer and mixtures thereof, the first elastomer exhibiting a first glass transition temperature and a first value of tangent delta measured as a function of temperature;

(b) a second elastomer selected from the group consisting of styrene-isoprene-styrene block copolymers, styrene-isoprene block copolymers, multiarmed styrene-isoprene block copolymers and mixtures thereof, said second elastomer exhibiting a second glass transition temperature greater than the first glass transition temperature and a second value of tangent delta measured as function of temperature, the second elastomer being immiscible in the first elastomer, said first and second elastomers provided in proportions of 0.5:1 to 5:1 and in which a dynamic mechanical spectrum plot of tangent delta as a function of temperature exhibits a polybutadiene-attributable first glass transition temperature peak determinable separate from and lower than polyisoprene-attributable second glass transition temperature peak; and

(c) a tackifying system comprising a normally solid tackifying component having a softening point of about 95° C. and obtained by polymerization of a stream solely composed of aliphatic petroleum derivatives in the form of dienes and monoolefins containing 5 to 6 carbon atoms, said tackifying component being preferentially miscible with the polyisoprene blocks of the second elastomer and present in an amount of from about 50 percent to about 70 percent by weight of the

elastomers and tackifying system and sufficient to cause an increase in the second glass transition temperature and an increase in the temperature difference between the polybutadiene-attributable glass transition temperature peak and the polyisoprene-attributable glass transition temperature peak and an increase in the tangent delta value attributed to the polyisoprene-attributable peak.

16. The article of claim 14 wherein the first tackifier further comprises a compound selected from the group consisting of a normally liquid tackifying resins obtained by the polymerization of a stream of aliphatic petroleum derivatives in the form of dienes and monoolefins containing 5 or 6 carbon atoms, a plasticizing oil and mixtures thereof.
17. The article of claim 15 wherein the tackifying system further comprises a compound selected from the group consisting of a normally liquid tackifying resins obtained by the polymerization of a stream of aliphatic petroleum derivatives in the form of dienes and monoolefins containing 5 or 6 carbon atoms, a plasticizing oil and mixtures thereof.
18. The article of claim 1 further comprising (c) at least one permanent adhesive covering a second portion of the first surface of the substrate.
19. The article of claim 18 wherein the removable adhesive comprises a rubber based adhesive, an acrylic adhesive, a vinyl ether adhesive, a silicone adhesive, or mixtures of two or more thereof.
20. The article of claim 18 wherein the permanent adhesive comprises an acrylic based or rubber based pressure sensitive adhesive.
21. An adhesive article comprising (a) a moisture resistant substrate having a first and second surface, and (b) a removable adhesive covering at least a first portion of the first surface of the substrate, wherein the removable adhesive has a cohesive strength of less than about 250,000 at 5°C.
22. The article of claim 21 further comprising (c) at least one permanent adhesive covering a second portion of the first surface of the substrate.
23. The article of claim 22 wherein the removable adhesive (b) comprises a rubber based adhesive, an acrylic adhesive, a vinyl ether adhesive, a silicone adhesive, or mixtures of two or more thereof.

24. The article of claim 22 wherein the permanent adhesive comprises an acrylic based or rubber based pressure sensitive adhesive.
25. A method of providing a reusable closure for packages, comprising (a) providing a package having a folding portion and a main portion wherein the folding portion is able to be folded over to cover the main portion of the package, (b) folding the portion over to close the package and (c) applying an adhesive article to the folded portion and the main portion so that the package remains closed, wherein the adhesive article comprises (i) a moisture resistant substrate having a first and second surface, and (ii) a removable adhesive covering at least a first portion of the first surface, wherein the removable adhesive has a Moist Loop Test result of at least about 0.25 N/25mm at a test plate temperature of 5°C.
26. The method of claim 25 wherein the package comprises a flexible package.
27. The method of claim 25 wherein the package comprises a food package.
28. The method of claim 25 wherein the package comprises a frozen food package.
29. A method of providing a reusable closure for packages, comprising (a) providing a package having a folding portion and a main portion wherein the folding portion is able to be folded over to cover the main portion of the package, (b) folding the portion over to close the package and (c) applying an adhesive article to the folded portion and the main portion so that the package remains closed wherein the adhesive article comprises (i) a moisture resistant substrate having a first and second surface, (ii) a removable adhesive covering a first portion of the first surface and wherein the removable adhesive has a moist loop test result of at least about 0.25 N/25mm at a test plate temperature of 5°C, and (c) at least one permanent adhesive covering a second portion of the first surface of the substrate.
30. The method of claim 29 wherein the package comprises a flexible package.

31. The method of claim 29 wherein the package comprises a food package.
32. The method of claim 29 wherein the package comprises a frozen food package.
- 5 33. A method of providing a reusable closure for packages, comprising (a) providing a package having a folding portion and a main portion wherein the folding portion is able to be folded over to cover the main portion of the package, (b) folding the portion over to close the package and (c) applying an adhesive article to the folded portion and the main
10 portion so that the package remains closed wherein the adhesive article comprising (i) a moisture resistant substrate having a first and second surface, and (ii) a removable adhesive covering at least a portion of the first surface and wherein the removable adhesive has a cohesive strength of less than about 250,000 at 5°C.
- 15 34. The method of claim 33 wherein the package comprises a flexible package.
35. The method of claim 33 wherein the package comprises a food package.
36. The method of claim 33 wherein the package comprises a frozen food
20 package.
37. A method of providing a reusable closure for packages, comprising (a) providing a package having a folding portion and a main portion wherein the folding portion is able to be folded over to cover the main portion of the package, (b) folding the portion over to close the package
25 and (c) applying an adhesive article to the folded portion and the main portion so that the package remains closed wherein the adhesive article comprises (i) a moisture resistant substrate having a first and second surface, (ii) a removable adhesive covering a first portion of the first surface and wherein the removable adhesive has a cohesive
30 strength of less than about 250,000 at 5°C, and (iii) a permanent adhesive covering a second portion of the first surface of the substrate.
38. The method of claim 37 wherein the package comprises a flexible package.

39. The method of claim 37 wherein the package comprises a food package.
40. The method of claim 37 wherein the package comprises a frozen food package.
41. A sheet of adhesive closures comprising:
a carrier sheet having a release surface; and
a plurality of adhesive articles releasably adhered to the release surface of the sheet, each article comprising (a) a moisture resistant substrate having a first and second surface, and (b) a removable adhesive covering at least a first portion of the first surface of the substrate; wherein the removable adhesive has a Moist Loop Test result of at least about 0.25 N/25mm at a test plate temperature of 5°C.
42. The sheet of claim 41 wherein the adhesive article further comprises (c) at least one permanent adhesive covering a second portion of the first surface of the substrate.
43. A roll of adhesive closures comprising:
a wound carrier having a release surface; and
a plurality of adhesive articles releasably adhered to the release surface of wound carrier, each article comprising (a) a moisture resistant substrate having a first and second surface, and (b) a removable adhesive covering at least a first portion of the first surface of the substrate; wherein the removable adhesive has a Moist Loop Test result of at least about 0.25 N/25mm at a test plate temperature of 5°C.
44. The roll of claim 43 wherein the adhesive article further comprises (c) at least one permanent adhesive covering a second portion of the first surface of the substrate.